

TWR-77393  
ECS SS12945



**SPACE SHUTTLE PROGRAM**  
Space Shuttle Projects Office (MSFC)  
NASA Marshall Space Flight Center, Huntsville, Alabama



# *Reusable Solid Rocket Motor* **STS-110 Flight Readiness Review/CoFR**

*Motor Set RSRM-85*

**26 March 2002**

*Presented by Mike Rudolphi*



**THIOKOL PROPULSION**

*P.O. Box 707, Brigham City, UT 84302-0707 (435) 863-3511*



SPACE SHUTTLE PROGRAM  
Space Shuttle Projects Office (MSFC)  
NASA Marshall Space Flight Center, Huntsville, Alabama



STS-110 (RSRM-85)

# Agenda

---

## Flight Readiness Review/CoFR

- 1.0 Previous Flight Assessment—STS-109
- 2.0 Certification Status—**No Constraints**
- 3.0 Changes Since Previous Flight—**None**
- 4.0 Configuration Inspection
  - 4.1 As-Built Versus As-Designed, Hardware, and Closeout Photo Review Status—**No Issues**
  - 4.2 Hardware Changeouts Since ET/SRB Mate Review—**None**
- 5.0 SMRB Nonconformances—**None**
- 6.0 Technical Issues/Special Topics—**None**
- 7.0 Readiness Assessment

Backup      LCC and Contingency Temperatures for STS-110



THIOKOL  
PROPULSION



SPACE SHUTTLE PROGRAM  
Space Shuttle Projects Office (MSFC)  
NASA Marshall Space Flight Center, Huntsville, Alabama



STS-110 (RSRM-85)

1.0-1

# Previous Flight Assessment—STS-109

## Disassembly Evaluation Summary—Status of Disassembly Activity

KSC Operations		LH RSRM	RH RSRM	Remarks
Initial LH/RH SRB viewing	*	Complete	Complete	
SRB/RSRM walkaround assessment	*	Complete	Complete	
Demate/evaluate aft exit cone (AEC)	*	Complete	Complete	
Remove/evaluate S&A and OPTs	*	Complete	Complete	
Remove/evaluate nozzle	*	Complete	Complete	
Remove/evaluate stiffener rings/stubs		Complete	Complete	
Remove/evaluate igniter	*	Complete	Complete	
Demate/evaluate field joints/evaluate insulation	*	Complete	Complete	
Utah Operations				
Disassemble/evaluate nozzle (joint No. 4 and 5)	*	Complete	Complete	
Disassemble/evaluate nozzle (joint No. 2 and 3)	*	Complete	Complete	
Disassemble/evaluate S&A	*	Complete	Complete	
Washout nozzle phenolics		01 Apr 2002	01 Apr 2002	
Washout nozzle AEC phenolics		17 Apr 2002	18 Apr 2002	
Measure/evaluate aft dome insulation		01 Jun 2002	01 Jun 2002	
Measure/evaluate RH segment and igniter insulation		N/A	01 Jun 2002	

\* RSRM Project committed to complete prior to next launch

- No constraints to STS-110 flight



THIOKOL  
PROPULSION

Mike Rudolphi

085-FRR/CoFR

2



**THIOKOL  
PROPULSION**



## *STS–110 Readiness Assessment*

*Pending satisfactory completion of normal operations flow  
(per OMRSD) and any open items identified for this review,  
the RSRM hardware is ready to support flight for mission*

*STS–110*

*26 March 2002*

*/s/ T. A. Boardman*

---

*T. A. Boardman  
RSRM Deputy & Chief Engineer  
Thiokol*

*/s/ G. C. Alford*

---

*G. C. Alford  
Vice President  
RSRM Program Management  
Thiokol*



*/s/ R. K. Burt*

---

*R. K. Burt  
Chief Engineer, RSRM Project  
NASA, MSFC*

*/s/ M. U. Rudolphi*

---

*M. U. Rudolphi  
Manager  
RSRM Project Office  
NASA, MSFC*



SPACE SHUTTLE PROGRAM  
Space Shuttle Projects Office (MSFC)  
NASA Marshall Space Flight Center, Huntsville, Alabama



STS-110 (RSRM-85)

Backup-1

# Current Flight Predictions

## LCC and Contingency Temperatures for STS-110

	<u>Heater Location</u>	<u>LCC</u>	<u>Minimum Allowable Sensor Temperature*</u>	
			<u>LH</u>	<u>RH</u>
	Igniter	74° F	72° F	72° F
	Forward Field Joint	86° F	80° F	70° F
	Center Field Joint	86° F	66° F	68° F
	Aft Field Joint	86° F	73° F	69° F
	Nozzle-to-Case Joint	75° F	64° F	63° F

\*LCC contingency temperature in the event of heater failure

Note: Calculation includes all standard repair conditions



THIOKOL  
PROPULSION

Mike Rudolphi

085-FRR/CoFR

Backup-1